Using Needs Analysis to Develop Interactive Digital-based German Speaking Teaching Materials in Tourism Vocational Schools

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Abstract. German is one of the foreign languages in great demand and studied by the world community, including Indonesia. The Vocational School's Travel Business Department teaches German subjects. It has implemented a government policy on skilled labor that aims to equip students with the skills, knowledge, and attitudes to be competent. This study aims to identify and analyze the needs of students regarding teaching materials to speak German, which students and teachers need in the Travel Business Vocational High School 1 Ambon both in terms of material content and learning media. This qualitative research collects data through observation, interviews, and questionnaires. The needs analysis in this study used the theory of Brindley, Hutchinson, and Waters, and Nation and Macalister's theory by dividing the needs analysis into objective and subjective needs. The objective needs included the students' identification and background, while the subjective needs included needs, deficiencies, and desires. This research found that the German language teaching materials used in the Vocational High School, Department of Travel Business, were still general and did not meet students' needs. The needs analysis results show that the expected German language teaching materials are relevant to the student's field and study program to support their primary expertise. In addition, the expected German language teaching materials are interactive digital-based speaking teaching materials.

Keywords: german; needs analysis; teaching material; speaking skills; vocational schools

1 Introduction

German is one of the foreign languages in great demand and studied by the world community, including Indonesia. According to a survey conducted every five years by the Federal Foreign Office in collaboration with the German Academic Exchange Service (DAAD), Goethe Institut, Deutsche Welle, and Zentralstelle für das Auslandsschulwesen (ZfA) in 2015, the number of German-language learners in Indonesia is 187,000. People [1]. In addition, the education system in Indonesia is technology-oriented due to IR 4.0, which involves a learning system [2]. This theory means that German is one of the foreign languages that people are very interested in. In this regard, various linguistic institutions in Indonesia, both formal and non-formal, have set a curriculum according to the needs of students to answer the challenges of

21st-century learning. In addition, to face the transformation of 21st-century education, German language learning has also implemented technology-based media in the learning process as a supporting facility [3]. Learning German in all these institutions refers to the applicable national curriculum and the Gemeinsamer Europäischer Referenzrahmen (GER). Based on the GER reference, the linguistic level at the SMA/SMK is at the primary level (A1) and (A2). In addition, learning German is centered on the four language skills, namely speaking skills (sprechen), writing skills (schreiben), reading skills (lesen), and listening skills (hören). In the learning process, the four language skills are integrated into one. They become one of the essential factors that need to be considered by the teacher. Namely, to achieve and meet the needs of students according to levels optimally and adapt the learning process to the current covid pandemic, where knowledge must be technology-based that can apply to online learning. The main thing teachers can do after the COVID-19 pandemic is minimizing the difficulties that arise by making it easier or more flexible to learn and expand access for all students with different backgrounds. Thus, all students can participate in learning in any situation.

Vocational high schools (SMK Negeri 1 Ambon), especially in the Travel Business Department as a printing institution for Human Resources to work in the world of tourism. This school has implemented a government policy on skilled labor that aims to equip students with the skills, knowledge, and attitudes to be competent. They have implemented a curriculum that refers to the job market's needs through German subjects, specifically tourism. Their outputs have been based on initial observations with German subject teachers at SMK Negeri 1 Ambon, especially in the Travel Business Department. They are currently working in the tourism sector, including as freelance guides, travel agency employees, and working in hotels in Ambon and Germany through the Ausbildung program. The impact of the high interest of students makes the program one of the means that can improve the ability of human resources.

Furthermore, every year, Maluku is visited by foreign tourists on cruise ships, both English- and German-speaking, opening up opportunities for students who master foreign languages, particularly in the field of tourism, to interact with them as tour guides. In line with the above facts, Gasperschitz emphasized that German is an important language and helps someone succeed in the international arena, one of which is working in the tourism sector [4]. Therefore, SMK Negeri 1 Ambon, especially in the Travel Business Department, as one of the formal institutions to produce quality human resources, must have graduates who describe the roles that graduates can play after going through the entire learning process at school.

However, in the learning process, it was found that there was a phenomenon of limited teaching materials used by German-language teachers at SMK Negeri 1 Ambon. Learning refers to one module developed by the teacher, and there is no available reference book or compulsory printed book that students can use. In addition, learning in class is also very conventional. There is no exciting atmosphere, and it makes students seem to have no interest in or motivation in taking German lessons in class. Whereas, according to the research results conducted by Selivanova et al. teachers can apply by developing teaching materials to increase student motivation in learning foreign languages [5]. Besides that, Depdiknas also recommends that if teaching materials that are commensurate with curriculum needs are not available or difficult to obtain, teachers can be creative in developing their teaching materials according to the characteristics of students [6]. However, based on the facts in the field, the teacher has not developed specific German language teaching materials in tourism. Because the substance of the syllabus and the German language material developed by the previous teacher is not relevant to the German language material, specifically in the field of tourism, in other words, the themes taught by the teacher are still general.

Meanwhile, the current online learning system due to the COVID-19 outbreak has made teachers experience difficulties in delivering German-speaking material. Teachers have not innovatively used interactive digital-based media in the classroom so that students still have difficulty speaking or communicating speech. German utterances on specific themes. This situation is evidenced by the learning results achieved by students majoring in the travel business; SMK Negeri 1 Ambon is still low. Whereas after graduating, students are expected to go directly into the world of work to implement the knowledge obtained while working. Thus, it can hinder learning objectives and can affect a person's performance because, through speaking skills, there will be communication between each other. The next obstacle is in the process of acquiring knowledge related to tourism. Ideally, a person's ability to speak or speak German should be equipped with material substances relevant to the major he is pursuing to meet the needs of students in the field. In addition, there is a need for interactive, effective, and innovative models of teaching materials so that they can create a pleasant learning atmosphere and produce maximum results in achieving learning objectives. To support this, interactive digital teaching materials are a safe solution to professionally develop teachers and students who are more intellectual in teaching and learning activities. This fact is confirmed by the research results, which states that digital transformation is a solution to prepare future professionals (teachers) to handle problems, including digital competence as a superior skill in the German language learning processs [7].

Based on the various facts above, the scope of learning materials for German subjects, specifically for Tourism, must be evaluated and developed according to the needs of the tourism industry, which is also based on interactive digital. As an initial step to develop an interactive digital-based German-speaking teaching materials model in the Vocational School of the Travel Business Department, it is necessary to analyze the needs of the teaching materials developed. Some of the relevant studies carried out are by Andi found a materials development methodology that resulted in a lesson plan and a prototype for one unit of needs analysis-based instructional materials. Designers or teachers may use the methodology to develop other Engish teaching materials in different courses [8]. Research conducted by Alyaz, Spaniel-Weise, and Gursoy focuses on digital game-based language learning in the context of German as a Foreign Language to hone students' linguistic skills and develop the professional qualifications of foreign language teachers [9]. In line with that research, Bond et al., in their research on digital transformation in the German language learning process, prepare future professionals (teachers) to handle problems and find solutions, including digital competence as a superior skill in the learning process [7].

Furthermore, Bikowski & Casal created interactive digital textbooks for language learning that can be accessed via mobile devicesces [10]. In line with this, the research results by Selivanova et al. explain that teachers can apply increased student motivation in learning foreign languages by developing teaching materials [5]. Serpara et al. also developed more comprehensive German language teaching materials that can support DfT (Deutsch für Tourismus) courses that emphasize students' skills to communicate about tourist attractions, especially in Maluku using German with "Fachbegriff," which is appropriate [11]. Research conducted by Chorna et al. focuses on aspects of the practical use of YouTube video materials commonly used in teaching German as a first or second foreign language in higher education. A needs analysis was carried out to collect information from the author's orientation of the various YouTube video material channels offered to everyone interested in learning German as a foreign language [12]. Menggo et al. researched student needs, and learning needs to develop English-speaking teaching materials in the 21st century [13]. On the other hand, Binbasioglu &

Nihat Sad researched language politeness in tourism [14], and Sipayung developed English teaching materials in the Department of Tourism [15].

In contrast, Binbasioglu conducted a case study of transforming an introductory tourism course from traditional teaching to student-oriented active learning through a textbook redesign [16]. Furthermore, Ginaya et al., about digital learning through the learning management system (LMS) English Discoveries (ED) on student achievement in English [17], Meanwhile, Riyanto et al. develop new teaching and learning materials that can help students prepare new skills relevant to the 21st century. One of the new teaching materials is an interactive digital e-book called a flipbook, one of the solutions for learning and improving student's critical thinking skills [18].

Based on several relevant studies above, this study aims to identify and analyze the needs of students regarding teaching materials to speak German, which students and teachers need in the Travel Business Vocational High School 1 Ambon both in terms of material content learning media. Analysis of the needs of this teaching material uses Brindley theory, Hutchinson & Waters theory, and Nation & Macalister theory by categorizing the needs analysis as objective and subjective. Objective needs include analysis of student identification and background, while subjective needs include analysis of needs (necessities), deficiencies (lacks), and wants (gaps) [19]–[21].

2 Research Methods

The approach used in this study is a qualitative one with descriptive-analytical methods. This research aims to identify, analyze, and describe the needs of German language teaching materials at SMK Negeri 1 Ambon through observation, interviews, and questionnaires with 1 German teacher and 44 students from classes X and XII of the Travel Business Department. The information gathered includes qualitative (interviews) and quantitative (questionnaires). The results of the data obtained by the researchers will be described both descriptively and analytically. It referred to the Brindley theory, the Hutchinson & Waters theory, and the Nation & Macalister theory. The stages of analysis used are as follows: 1) identify the problems that exist in the learning of German in SMK. 2) analyze the needs of students and teachers in the Vocational School of Tourism Department (Objective and Subjective).

The dimensions of the questions in the objective needs analysis consist of the experience of learning German, the background of learning German, knowledge of interactive digital and supporting media in learning, interactive digital, and students' motivation to learn German. In contrast, the dimensions of the questions in the subjective needs analysis consist of (1) themes and learning materials, (2) learning activities, and (3) learning and evaluation media.

3 Results and Discussion

The Problems that Exist in the Learning of German in SMK Negeri 1 Ambon

Based on the results of observations and interviews with 44 students from classes X and XII, it was found that there are several problems that students and teacher in learning German often experience. These problems can be seen in the graph below:
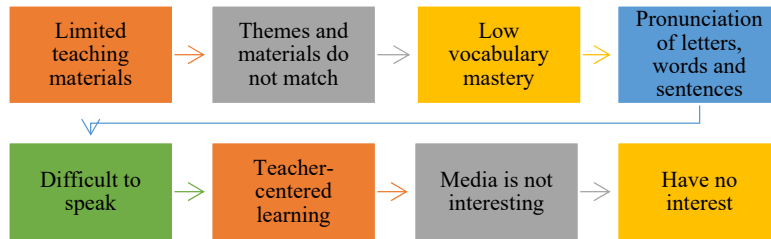
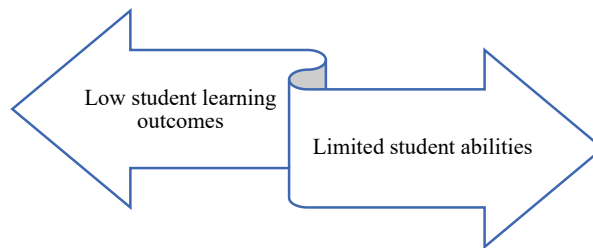**Fig.1.** Results of Students Problem

Fig.2. Results of Teacher Problem

In teaching German, students are taught and directed to use the language to interact directly or indirectly with people who can also use German. Students communicate to express their opinions and desires through excellent and correct language through these interactions. This fact means that, through language teaching, students are expected to be skilled in the language. However, in reality, in the field, it was found that students of SMK Negeri 1 Ambon, Department of Travel and Tourism, still had many difficulties in understanding German-language material. The leading causes are the lack of teaching materials owned by students and the substance of the material that is not relevant to their field of expertise. In addition, vocabulary mastery is thought to be one of the supporting factors influencing students' understanding of the subject matter. Students often face the problem of how they can store new vocabulary in their memory well and apply it in language activities. Other problems include pronouncing letters, words, and sentences correctly according to proper structure and grammar. The tendency of the students' weak understanding abilities is motivated by, among other things, physical, psychological, vocabulary, and structural factors. These factors can cause the level of language ability of each student to be different.

In addition, in teaching German, especially speaking skills, students must pay attention to structure and grammar. This factor resulted in students not having the courage to speak for fear of making mistakes and becoming the laughing stock of other students. Besides, the learning process does not vary. There is no application of certain media, such as digital-based media, to stimulate students' knowledge in the learning process. Learning is only centered on the teacher, so students have minimal interaction, especially with online learning conditions after COVID-19. This situation resulted in students not being interested in learning German (Fig 1). In connection with the various student problems above, the German language teacher is also faced

with problems such as low student learning outcomes due to the limited ability of students when learning German. Teachers have difficulty designing appropriate learning media to improve students' speaking skills (Fig 2).

Based on the observations and interviews above, it is necessary to analyze the needs of students and teachers as one of the first steps in developing teaching materials for speaking German for students at SMK Negeri 1 Ambon, Department of Travel Business.

Objective Needs Analysis (Identify and Student Background)
Based on the questionnaire results given to 44 students at vocational schools in the Travel Business Department, it is seen from the background of the student experience that the information obtained indicates that 89% of students do not have much experience in learning German. In contrast, 11% of them have studied German through private courses and self-taught because they aspire to work in Germany. From a cognitive perspective, 86% of students have not been able to speak German correctly and adequately. In contrast, 14% of students often practice speaking German with several colleagues or alumni of SMK Negeri 1 Ambon working in Germany through the Ausbildung program. Furthermore, it was found that 27% of students already know applications that can be used to practice speaking German skills. Only 23% of students have used these applications to practice speaking German. In terms of motivation, it was found that 45% of 44 students were interested in learning German, and 55% of those students did not have high motivation and interest in learning German for various reasons, one of which is related to teaching materials.
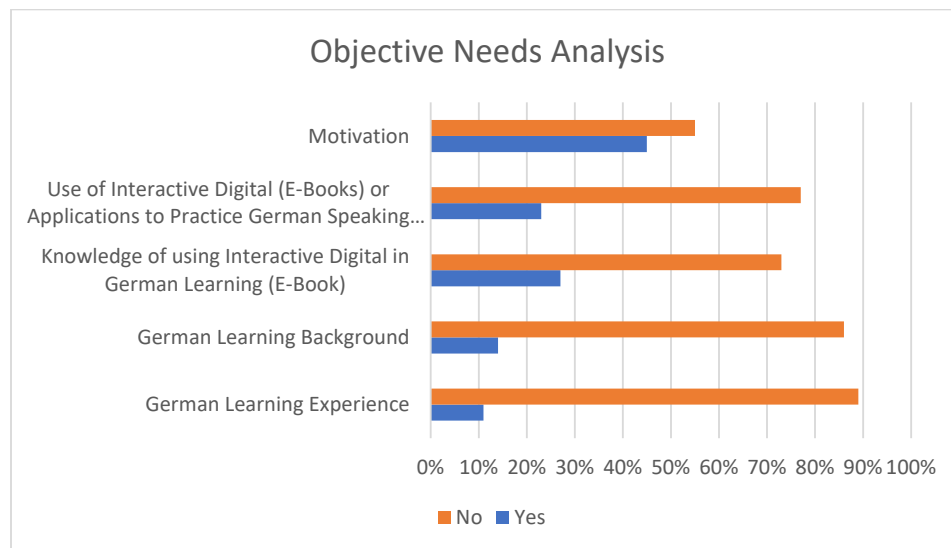

Fig.3. Results of Objective Needs Analysis.

Subjective Needs Analysis (Needs, Weaknesses, and Wants)
Based on the results of the questionnaire, it was found that the results of the subjective needs analysis are described in the following table:

Table 1. Results of Subjective Needs Analysis (Needs, Weaknesses, Wants)

Subjective Needs Analysis	Indicator	Yes %	No %
Needs	German Learning Process	95	5
	German Learning Resources	57	43
	Content and Teaching Materials	61	39
	Learning Tools (PC/Laptop/Smartphone)	93	7
	Internet facility	100	0
Weaknesses	Difficulty in speaking German	89	11
	Themes that are not yet relevant in the field of tourism	84	16
	Digital-Based Media	48	52
	The Need for Speaking Teaching Materials	100	0
Wants	Digital-based Teaching Material Model (E-Book)	93	7
	Themes relevant to the field of tourism	95	5
	Image, animation, audio and audiovisual media	93	7
	Practice speaking German	93	7
	Can be used both offline and online	100	0

Needs Analysis Results. 95% of students found that learning German is very important in the German learning process indicators. The learning process has been going well, but 43% experienced obstacles related to learning resources. This situation is evidenced by students' needs for learning resources used to obtain German-language material for 57% of the modules developed by teachers. There are no mandatory reference books. Most of the material is also sourced from the internet. These conditions significantly affect the teaching materials transferred from teachers to students. The results show that 6% of the content, content, or material taught in German is still general and has not focused on specific themes in the tourism sector. In addition, 93% of students often use smartphones, PCs, or laptops as tools in language learning. All students need internet facilities to support online and offline teaching and learning activities. Based on the results of the needs above, the scope of learning materials for German subjects, specifically in the Travel Business Department of SMK Negeri 1 Ambon, must be evaluated. It was developed according to the needs of the tourism industry, which is also based on interactive digital. Based on interviews with German language teachers, learning only uses one module and is supported by learning media in the form of power points. Meanwhile, teachers must take advantage of the presence of technology to expand the reach of learning, learning resources, and developing learning systems.

Weakness Analysis Results. In analyzing deficiencies, the general questions are about learning activities, learning time, learning facilities, learning materials, learning media, and evaluation. The deficiency aspect emphasizes more difficulties or obstacles in learning German. The results

are as follows: 89% of students majoring in the travel business have difficulty communicating in German because of the teacher's lack of practice or speaking exercises. Other obstacles, such as how to read and pronounce letters, words, and sentences in German, and the material provided, are sometimes not understood by students because the learning process is done online. Students often experience network disturbances and do not always absorb well the material explained by the teacher during virtual face-to-face. In terms of content, 16% of the materials are relevant to students' needs, such as materials related to German culture (knowledge of the states in Germany) and the climate in Germany. The other 84% is not yet relevant to the needs of students in the field, namely in the field of tourism. The material focuses on grammar exercises, understanding Familienstambaum, from small to large families, understanding the numbers 1–100 in German, and other general themes. In addition, the material is presented only using media such as PowerPoint, with a percentage of 52%, so that engaging, interactive digital-based media has not been implemented in the teaching and learning process. 48% of media deployments are only from the Zoom meeting and Google Meet apps. In connection with these results, the overall learning process still experiences many shortcomings in various aspects. This condition is also evidenced by interviews with subject teachers that students sometimes find it challenging to convey their ideas. Students' learning outcomes from speaking German are still low. All students need relevant teaching materials to improve learning outcomes and familiarize themselves with speaking German.

Wants Analysis Results. Based on the results of the deficiency analysis described previously, 100% of students need appropriate German-speaking teaching materials. At this point, the results of the analysis of student desires will be described as follows: As many as 93% of students want interactive digital-based German-speaking teaching materials equipped with interesting German-speaking materials includes pronunciation, vocabulary, sentences, discourse text, context dialogue, and exercises and use interactive instructions so that can stimulate student responses. These teaching materials are appropriate to the student's characteristics and level. Language A1 to A2 (*Nivau*) at SMK is helpful with the glossary. 95% of students expect that the themes to be developed are centered on themes in the tourism sector, both in formal and informal communication (language politeness). The themes desired by students are as follows: Tourism (*Tourismus*), Airports (*Im Flughafen*), Hotels (*Im Hotel*), Restaurants (*Im Restaurant*), Travel (*Im Reisebüro*), Tourist Places (*Tourismussektor*), and other Communicative speech is included in the cultural component (language politeness). In this regard, 93% of students want pictures, animations, audio, and audiovisual pronunciation of German vocabulary in the teaching materials. 93% of students also want teaching materials that provide exercises both independently and in groups, at the same percentage. The forms of exercise that students want are: 1) speaking practice in the form of dialogue, 2) speaking practice with the help of *Redemittel* (expressions), 3) speaking practice with the help of learning videos, 4) speaking practice with the help of audio or recordings, and 5) speaking practice with the help of interactive Media assistance, which makes it easier for students to interact and practice speaking German with electronic devices such as computers, laptops, and smartphones both online and offline.

Discussion

Needs analysis is the initial stage in development research because there is a need for a design in development. Early identification of students is mandatory. The analysis in this study resulted in information about the characteristics and background of students in the process of

learning German in the field and the needs, lacks, and desires or gaps or want to be achieved by students and German teachers at SMK Negeri 1 Ambon, Department of Travel Business. The information obtained in this needs analysis forms the basis for developing technology-oriented German language teaching materials. The needs above are divided into two categories, namely objective and subjective needs analysis. Necessity, lack, and gaps are intertwined, with impediments to achieving learning objectives being items that must be completed depending on the wants and needs of students and teachers [22]. A needs analysis identifies students' backgrounds, needs, and learning barriers. In addition, data needs can also be obtained through suggestions and comments from students in terms of language content and features or media to be developed [23].

Mastery of speaking skills must also be supported by mastery of vocabulary. Not only that, knowledge of the pronunciation of the vocabulary itself needs to be learned. Otherwise, students will feel insecure about speaking German. To improve vocabulary mastery, one thing that can be done is to practice using the android game "*Weit du das*?" for vocabulary learning [24]. The use of digital-based technology in schools is intended to increase student motivation and improve students' language skills and IT mastery [25]. This opinion means that to achieve learning success in the 21st century, schools must also adapt to existing developments not to be left behind by designing interactive digital teaching materials models. The technology that has developed in the form of interactive digital has made a significant contribution to everyone in obtaining information and increasing knowledge both by way of learning and in the teaching process in the classroom. Technological assistance is also very influential in producing professional human resources in their fields. Likewise, the teaching materials that will be developed must adapt to the era of the Industrial Revolution 4.0, the latest innovation in education [26]. Teachers must apply digital-based learning during distance teaching of foreign languages, one of which is German [27].

According to the German teacher, the speaking skills of class X and class XII students of SMK Negeri 1 Ambon are still lacking due to the students' lack of confidence to speak German. This situation can be because students are less intensive in practicing speaking German because of the teacher's lack of practice or speaking exercises. Other obstacles, such as how to read and pronounce letters, words, and sentences in German and the material provided, are sometimes not understood by students because the learning process is done online. Students often experience network disturbances and do not always absorb well the material explained by the teacher during virtual face-to-face. In addition, the themes taught are not relevant to the needs of students in the field, namely in the field of tourism. The material taught is more centered on grammar exercises and general themes. Furthermore, in learning speaking skills, students need learning media with an appropriate image, audio, visual, and audiovisual media to support skill improvement. The content in the teaching materials must be supported by the availability of text, images, animation, audio, audiovisual, and interactive instructions in practicing German-speaking independently [28].

Based on student and teacher responses to the evaluation of learning so far, students need a model of German-speaking teaching materials relevant to their fields and study programs to support their primary expertise. They want teaching materials that provide exercises both independently and in groups. In addition, teaching materials will be packaged based on interactive digital technology to improve students' German speaking skills.

4 Conclusion

The research data results show that students at SMK Negeri 1 Ambon still experience problems in learning German. Especially in speaking skills, they need a teaching material model to speak German with content that includes: 1) The tourism industry includes linguistic components such as pronunciation, vocabulary, and sentences, discourse text, and context dialogue. 2) Communicative speech is included in the cultural component (language politeness) related to the theme of the material so that it can add insight to students. 3) Interactive digital media. 4) Instructions and explanations of materials. This material needs to be used at German levels A1-A2, assisted by a glossary. 5) Learning activities are carried out both individually and in groups. 6) Teaching materials can be accessed with electronic devices such as computers, laptops, and smartphones. 7) Audio, visual, and audiovisual support are included in the teaching materials. 8) Teaching materials use interactive instructions to stimulate student responses. 9) At the end of each material topic, there is a good learning evaluation task and speaking practice exercises. 10) Instructional materials can be used both online and offline.

Thus, it can be concluded that teachers and students need teaching materials that follow the needs of students. They require both material content that supports students' competence and expertise in the travel business (Tourism) and teaching materials packaged based on interactive digital (E-Books). The materials include text, images, animation, audio, audiovisual, and interactive instructions.

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